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AUTHOR	Clemente, Frank; Summers, Gene F.
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CENTER OF APPLIED SOCIOLOGY
University of Wisconsin-Madison

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Frank Clemente
Pennsylvania State University

Gene F. Summers
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** Associate Professor, Department of Sociology, 206 Liberal Arts Building, Pennsylvania State University, University Park, PA. 16802.

*** Director, Center of Applied Sociology, 603 WARF Building, University of Wisconsin, Madison, Wisconsin 53706.

AGE AND THE JOURNEY TO WORK

ABSTRACT

An hypothesis suggesting an inverse association between age and distance traveled to work was tested by correlation analysis. The results indicated no support for the expected linear relationship between age and distance commuted. This finding runs counter to the well documented inverse relationship between age and other dimensions of geographic mobility. Several possible reasons for the failure of age to emerge as a predictor of distance traveled to work are suggested and briefly discussed.

Age and the Journey to Work

The distance between place of residence and place of work has received considerable empirical attention. In the search for predictive correlates of distance commuted, numerous variables have been examined including race (Duncan, 1956), sex (Thompson, 1956), income (Catanese, 1970), marital status (Holmes, 1971), occupation (Wheeler, 1969), and duration of employment (Lonsdale, 1966). One potentially important factor which has received only cursory attention, however, is age. Given the well documented inverse relationship between age and other dimensions of geographic mobility (e.g. Shryock, 1964; Lansing and Mueller, 1967; Speare, 1970; Long, 1972) this neglect of age in the study of commuting patterns is somewhat surprising. Clearly, if the impact of age upon spatial mobility is to be fully explored, research cannot be limited to migration and changes in residence, but also must include daily travel patterns - of which the journey to work is perhaps the most important. The present paper extends knowledge along these lines by focusing on the impact of age of industrial workers upon distance commuted to work.

Our review of the literature uncovered only three instances where the relationship between age and distance traveled to work was empirically examined. Adams and Mackesey (1955), Thompson (1956) and Lonsdale (1966) found a negative association between these variables. Unfortunately, due to the gross nature of available data, these analyses were confined to zero-order correlations and hence, may well be spurious. For example, previous investigators (e.g. Wheeler, 1969) have demonstrated that

income influences commuting patterns. Failure to control for income may lead to false conclusions.

While the methodological limitations of previous studies should be emphasized, we believe the findings from such research, coupled with the widely recognized negative association between age and other facets of geographic mobility, allow for the formulation of the following conceptual hypothesis: There is an inverse relationship between age and distance traveled to work.

Procedures

Data: The sample was drawn from the labor force of a large steel finishing plant in a non-metropolitan area of north central Illinois. There is no mass transit system in the area and all workers at the plant commute by automobile.

Data were obtained from the 1972 personnel files of the plant. Schnore (1960; 1965) and Goldstein and Mayer (1964) have noted the fecund nature of management records for the study of commuting patterns. Complete data were available for 1,003 (98%) of the 1,020 white male employees (29 female and 6 blacks excluded). This entire group of 1,003 constitutes the sample.

Operational Definitions: Age was measured as number of years of age as of August, 1972. Distance commuted was measured along two dimensions: (1) airline miles, and (2) road miles between place of residence and the plant site. While airline miles has traditionally been employed as an index of distance commuted (e.g. Duncan, 1956; Wheeler, 1967; Catanese, 1970), Lonsdale (1966) has suggested that road miles should also be taken into account. Accordingly, using

detailed county maps (Illinois Department of Public Works - Division of Highways, 1970) we calculated both indices of distance commuted for each of the 1,003 individuals in the sample.

Statistical Procedures: Zero-order correlation analysis was used as an index of the gross relationship between the variables. Second-order partial correlation coefficients were calculated to test the hypothesis. Previous research (cf. Catanese, 1970) has indicated that income and marital status exert independent effects upon work-residence separation. Unless these two variables are controlled, therefore, their influence could confound the analysis.

Age and Distance Commuted

Before turning to the results of the least squares analysis, it is useful to examine some key distributional aspects of the data. First, the mean age of the sample is 33.1 with a standard deviation of 12.8 years. Second, the mean distance from place of residence to the plant site is 13.3 airline miles and 19.1 road miles. The respective standard deviations are 11.3 and 7.3 miles. Thus, there is wide variation on the dependent and independent variables. Third, the zero-order correlation between airline and road miles is .941. This finding suggests that these indices are virtually interchangeable as indicators of distance commuted.

When we turn to relationship between age and miles traveled to work, some surprising results emerge. First, the zero-order correlation between age and airline miles is only -.038 and that between age and road miles is only -.029. Second, and more important, when the effects of income and marital status are removed, the resulting second-order

partial correlations are only -.022 and -.028 respectively. Clearly, the data provide no support for the hypothesized inverse relationship between age and distance traveled to work. In no instance does age account for even one percent of the variation in miles commuted.

Comment

The findings strongly suggest that the relationship between age and commuting behavior does not parallel the inverse relationship between age and other dimensions of geographic mobility, e.g. migration. The hypothesized negative linear association received no support. Further, inspection of a computerized scattergram indicated a random scatter of points. More specifically, for our sample at least, neither a linear or a curvilinear relationship emerged between age and miles traveled to work.

Of course, before firm conclusions along these lines can be drawn, further research is necessary. Our analysis had several important limitations. First, the sample was confined to white males. Future research should examine the impact of age upon distance commuted for females and blacks. Second, the analysis was restricted to industrial workers. This limitation was not critical due to the extremely diverse labor force at the plant - ranging from chemists and computer programmers to common laborers and expert steel finishers. On the other hand, future research could profitably focus upon non-industrial workers. Third, our research examined only automobile commuting. Studies of plants where workers use rail, bus or other forms of transit could lead to different conclusions.

In sum, our findings are best viewed as tentative. Unfortunately, we suspect that few supplemental data will be forthcoming. Obtaining

adequate data on commuting patterns is a serious problem. The gross nature of secondary, e.g. census, data and the general inaccessibility of management records severely restrict both the quantity and quality of information on commuting patterns.

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